E – Commerce Website

Submitted in partial fulfillment of the requirements of the

degree

BACHELOR OF ENGINEERING IN **COMPUTER ENGINEERING**

By

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CERTIFICATE

This is to certify that the Mini Project entitled **" E-Commerce Website"** is a bonafide work of **Pooja Bhagat(104) ,Priyanka Korde(118), Raughwardayal Maurya(123), Rohit Mishra (125)** submitted to the University of Mumbai in partial fulfillment of the requirement for the award of the degree of **"Bachelor of Engineering"** in **"Computer Engineering" .**

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Mini Project Approval

This Mini Project entitled "E-Commerce Website" by **Pooja Bhagat(104) ,Priyanka Korde(118), Raughwardayal Maurya(123), Rohit Mishra (125)** is approved for the degree of **Bachelor of Engineering** in **Computer Engineering.**

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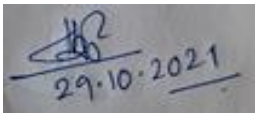

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ABSTRACT

In this project, we are planning to build an e-commerce website that will contain all types of products. It includes many domains as shopping page, cart page, etc. We are also planning to provide the admins to track the visitors on the website.

Considering the amount of time people spend on the internet, businesses too have moved online. Having a website for business owners of any size and a presence on social media has become crucial. If you are into a business and do not own a website, you might be losing a lot of potential customers online. Knowing the importance of a website is key to grow your business many folds.

ACKNOWLEDGMENT

The satisfaction that accompanies that the successful completion of any task would be incomplete without the mention of people whose ceaseless cooperation made it possible, whose constant guidance and encouragement crown all efforts with success. We are grateful to our project guide *Prof. Rajendra Gawali* for the guidance, inspiration and constructive suggestions that helpful us in the preparation of this project We also thank our colleagues who have helped in successful completion of the project.

LIST OF ABBREVIATIONS

SHORT FORM	FULL FORM
B2B	Business-to-Business
B2C	Business-to-Consumer
C2C	Consumer-to-Consumer
C2B	Consumer-to-Business
SSR	Self Service Registration

LIST OF FIGURES

CHAPTER 1
INTRODUCTION

1.1) Introduction

E-Commerce websites are online portals that facilitate online transactions of goods and services through means of the transfer of information and funds over the Internet. In the early days, e-commerce was done partially through emails and phone calls. Now, with a single website, anything and everything that a transaction needs, can be executed online.

Types of E-Commerce websites

Business-to-Business (B2B): Electronic transactions of goods and services between companies. Example: A business sells SAS products to other businesses.

Business-to-Consumer (B2C): Electronic transactions of goods and services between companies and consumers. Example: You buy a new t-shirt from an online store.

Consumer-to-Consumer (C2C): Electronic transactions of goods and services between consumers, mostly through a third party. Example: You sell your old smartphone on eBay or Olx to another consumer.

Consumer-to-Business (C2B): Electronic transactions of goods and services where individuals offer products or services to companies. Example: A Social media influencer offers exposure to their online audience in exchange for a fee.

1.2) Motivation-

- **Affordable Price** - Investment in online business is low compared to a brick-and-mortar store. Therefore, ecommerce can offer cheaper rates with other additional advantages that ultimately lures the shoppers to go online for various shopping needs.

- **Wide Selection Options** - Ecommerce customers can surf the various stores for a wide range of products to make a better choice.

- **Convenience** - Online shopping eliminates traveling or walking from one shop to another and save time, fuel, and money on visiting a number of brick stores.

- **Price Comparison** - Due to comparatively low investment in ecommerce and stiff competition in online businesses, customers can get the best deal

- **Free shipping and other incentives** - The shipping price is the biggest obstacle after the delay due to shipping in the way to ecommerce. Therefore, to lure more online customers, ecommerce stores are offering free shipping on bulk/big volume purchases or big amount of order.

1.3) Problem Statement

The purpose of e-commerce website is to help customers narrow down their broad ideas and enable them to finalize the products they want to purchase. A website that is optimized for smartphones , secure, navigation to products page and the shopping cart.

Objectives

- **Providing a unique customer experience**- One of the best ways to stand out from the crowd is by providing a unique customer experience. This includes giving a personalized experience to each customer or visitor of your online store, website, or mobile app. Some other pointers to consider are round the clock customer service, immediate responses to the queries rose, engaging with the customers, and so on.

- **Increasing the number of loyal customers –** Customers are the core of all business strategies. So, ensuring the great customer experience is of prime importance for the growth of the business. You need to meet your customers where they spend their time. If you meet your customers where they are already active, the chances of them, interacting with your business increases two folds. You can increase the number of loyal customers by giving the best experience to your already existing customers as well as bring in newer customers.

- **Boosting the efficiency of services –** With the continually evolving technology, you need to enhance the efficiency of your services. By choosing an online ecommerce platform to create an online store, you can efficiently reduce the cost of managing and selling online. You have various opportunities to boost the efficiency of your service that eventually enhances the revenue earned.

- **Making responsive ecommerce website-** By responsive, it means to create a website that can be viewed from any devices of varying screen size, equally. Studies say that Google may next rank a website based on its mobile website. It means that any website that has a responsive design would be ranked on top of the website that does not have one. Making your ecommerce website responsive can help you optimize it.

- **Developing business relations-** With ecommerce as the primary use, business development can be easily achieved. The direct communication between a company and the customer, the business relationship can be boosted. Eventually, the ecommerce market shall be expanded.

CHAPTER 2

LITERATURE SYRVEY

State of E-Commerce

Online buying behaviour is affected by various factors like, economic factors, demographic factors, technical factors, social factors, cultural factors, psychological factors, marketing factors and legislative factors. Customers choose an online-shop mainly based on references, clarity terms of delivery, graphic design and additional services. Problematic customers read discussions on the Internet before they spend their money on-line and when customers are incapable of purchasing the product fast and with no trouble they leave online-shop. Kotler, (2003) described Consumer buying method as learning, information-processing and decision-making activity divided in several consequent steps: Problem identification, Information search, Alternatives evaluation, Purchasing decision, Post-purchase behaviour. Euthymia identified the main constituent of the online shopping experience as follows: the functionality of the Web site that includes the elements trade with the site's usability. the emotional elements planned for lowering the customer's hesitation by communicating trust and credibility of the online seller and Web site and the content elements including the aesthetic aspects of the online presentation and the marketing mix. Usability and trust are the issues more regularly found to influence the online consumer's behaviour. Karayiannis, (2 examined the discriminating of potential determinants between web- shoppers and non-shoppers. Free shipping is a great motivator to purchase the products and customers are willing to pay nominal charges for getting their products. While comparing the shopping with others shopping, consumers take product price and shipping charges almost equally into deliberation. There are some ways that retailers can do to improve the experience for their online shoppers. The first is to write the expected delivery date of the order, customers are willing to wait for their orders but want to know just how long that force is. Timely product shipment encourages shoppers to recommend an online retailer. Consumers also want to track updates and delivery notifications to understand when their package is incoming. Online shoppers want flexibility in their shipping, mainly the ability to give special delivery instructions or schedule a delivery time. Customers are also wanting to get the address changing option for filling the wrong address when they are purchasing online.

2.1) Existing Systems

1. Amazon

Amazon is one of the biggest online stores with a global presence. It not only provides a variety of product choices but also provides a great user experience and splendid customer service. Besides putting prominence to personalization, Amazon also monitors user's browsing and purchase patterns in order to provide them recommended products for future purchases. It operates in India as a marketplace rather than a retailer.

Amazon has started two new initiatives for sellers in India: the 'Self Service Registration (SSR)' and 'Amazon Easy Ship'.

Amazon SSR allows sellers to self register in Amazon marketplace, irrespective of location and size of the catalog. It enables sellers to start selling within a day without any third party intervention. With Amazon Easy Ship, the seller has to pack the shipment and confirm to Amazon that they are ready to ship. Amazon Logistics ensures that the pack is delivered to the customers within two to three working days. With new features such as Amazon Prime,

customers can receive delivery of products within 24 hours. By reducing the shipping time, Amazon keeps both retailers and customers happy and increases customer stickiness on the website.

Right from mobile phones, to fashion products, electrical appliances, books, and grocery, Amazon has become a one-stop shop for all consumer needs.

2. Flipkart

Flipkart is an Indian based e-commerce venture and over the years, it has garnered a lot of interest in the minds of Indian consumers. It has opened up the scope for Indian e-tail market in a tremendous way. It started out as an online bookstore and now it has a gamut of products ranging from: books, apparels, electronics, digital music, home care and beauty. Moreover, it has now become a mega marketplace.

Flipkart's fundamental differentiator is its supply chain efficiency— definitive delivery of goods. It has been continuously developing and improving the customer experience. The website is easy to browse, hassle-free, and convenient.

Two of the most important reasons for Flipkart's grand success are the discounts and the option of Cash- on- Delivery which makes consumers more confident in purchasing products. Flipkart has an amazing customer retention rate with 70% of repeat customers.

Apart from the shopping experience, Flipkart's biggest online shopping festival – Big Billion Days is one of the most successful campaigns and it churns out millions of orders during that shopping season.

3. Jabong

Jabong came into the e-commerce market with a bang and created a revolution within 6 to 7 months of launch. Besides selling products on their own through inventories, Jabong is also an online marketplace for third-party sellers. They predominantly cater to apparel, footwear, jewelry, and accessories and catalog more than 50,000 products across 700 brands.

Jabong is known for its own logistics network that ensures fast delivery. If you are in a city like Delhi, you are bound to receive the product within 24 hours of order placement. Jabong is also trying to expand its international presence through its site 'JabongWorld.com'. It ships Indian products to international customers.

One of Jabong's uniqueness lies in its new idea of a fashion magazine— "The Juice"an interesting blend of fashion, people, trends and pop culture. The magazine has everything in it that readers would love to read in a fashion magazine. Jabong has also collaborated with films such as "Bhaag Milkha Bhaag", "Main Tera Hero", and "Humpty Sharma ki Dulhaniya" to offer exclusive products inspired by the movie.

The various payment gateways offered by Jabong have made it convenient for consumers to order products from the website. In 2016, Jabong was acquired by Myntra.

4. Snapdeal

Snapdeal is a successful e-commerce portal catering to customer's buying needs at a much wider aspect. It was established with a concept of making products available to the customers at a discounted rate through offers and Snapdeal coupons.

It gives you the best deals in a particular city in various service categories ranging from: restaurants, spas and salons, apparel, footwear, baby care, home and décor. It has adopted the marketplace business model. Snapdeal came up with a unique idea of permitting local vendors and manufacturers to publish their product catalog and sell it on the Snapdeal portal. This avoids expensive costs involved in building own inventory.

Snapdeal's business model was awarded with mammoth funding to scale up their products, business and operations. It focuses on logistics and efficient delivery to customers. It operates in such a fast pace that a new product is added in every 30 seconds.

5. Myntra

Myntra is one of the largest shopping e-tailers in fashion and lifestyle merchandise. It supplies a wide range of products from clothing to footwear and accessories. It focuses on bringing the most fashionable brands for its customers. In 2014, Myntra was acquired by Flipkart.

Myntra has created a niche in the territory of e-commerce and subtle trust from people. Additionally, from discounts to Cash-on-Delivery benefits, the Myntra success mantra belongs to its hybrid logistics model. It takes uttermost care of its supply chain management and employs delivery agents with high experience.

Myntra has also come up with a complete guide to your everyday fashion and latest style trends. The "MyntraLookGood" is a daily fix of style tips, beauty tricks, celeb fashion, and non-stop entertainment. The tie-ups with celebrities and events are an outstanding strategy by Myntra to represent that fashion is in its DNA. Myntra has many celebrity brands— Hrithik Roshan's HRX, Salman Khan's Being Human, Deepika Padukone's All About You, and Farhan Akhtar's MARD. They believe that Bollywood influences fashion and frequent tie-up with celebrities helps to bring customers closer to Myntra.

6. Shopclues

Shopclues is the latest addition to the top e-commerce websites in India. Unlike Amazon and Flipkart, Shopclues is a market place that focuses on unstructured categories of home, electrical, fashion, and daily utility items. The mass market of shopclues comes from tier 2 and tier 3 cities and most of its business comes from smaller cities. Shopclues helps give brands from unstructured markets a voice of its own.

Shopclues has a comparatively larger merchant base. It focuses on small and medium sized traders located in smaller cities and helps them take their business online. With over 50 million visitors on its website, one of the major revenue generating categories has been the home and kitchen appliances category.

7. PayTm

PayTm is the second largest e-commerce platform in India and has also made its way to the list of unicorn startups. Primarily started as a mobile wallet, in 2016, PayTm entered the e-

commerce industry with PayTm Mall. As the name suggests, it is an online market place for products ranging from electronics to daily consumer needs.

One of the attractive features of PayTm has been its cashback feature. Consumers are given a variety of discount coupons to chose from and also provide good savings on the purchase of goods. With close to 120 million buyers on the platform, PayTm Mall is finding new ways to enhance the buying experience. It is also collaborating with retail brick-and-motor stores and with use of its mobile app and QR codes, it takes the customer through an online shopping experience with attractive discounts.

Thus, India is a growing marketplace and e-commerce industries are bound to flourish. But with the right technology and design strategy, new entrants can have a competitive edge.

2.2) Limitation Existing system or Research gap

Security

Consumer concerns about the security of eCommerce pose a serious limitation to eCommerce. As much as someone may refuse to purchase a car with a poor safety track record, a person may refuse to engage in a form of commerce they do not trust. Such lack of trust does not come from nowhere. The 2012 Norton Cybercrime Report indicates that, in 2011, consumer cybercrime cost $21 billion in the United States alone and impacted over 556 million people globally. Until perceptions regarding eCommerce security change, those perceptions will remain a limiting factor for eCommerce.

Infrastructure

Ecommerce grants businesses global reach, but subpar or non-existent infrastructure limit consumer access to the means of accessing eCommerce. According to a Federal Communications Commission report, as of June 2010, over 26 million people lacked access to broadband Internet service in the United States. In Europe, over 300 million people do not use the Internet. While time can remedy such infrastructure gaps, it stands as an ongoing limitation.

Competition

The field of eCommerce consists of fierce competition for the eyes and dollars of consumers. Businesses wanting to sell online must compete with entrenched eCommerce giants, such as Amazon and Staples, which brought in a combined total of approximately $58.5 billion in 2011. Businesses must also capture market share from other small vendors, many of which offer identical or nearly identical products or services. Vendors that sell custom or specialty products may face somewhat less competitive conditions due to the unique nature of their products.

Limited Interaction

Unlike shopping in a brick and mortar store or talking directly to a service provider, eCommerce places inherent limitations on interaction. At the product level, customers must make decisions based on images, product descriptions and reviews. Customers cannot handle

a product to see if it feels good in their hands or weighs enough to indicate the manufacturer employed quality materials in its construction. Much of the customer service provided by those engaged in eCommerce happens strictly through digital means, such as forms on the website or an email, often with long lag times between filing a complaint and receiving a reply.

2.3) Mini Project Contribution

This project develops an e-commerce website where the admins can add products, images, details, status and the users can buy the products by adding them to cart. The user has to register and then login by providing credentials.
The user after logging in can search the desired product with the help of a search bar or by visiting the category menu. The various categories include jewels, electronics, etc. This project includes computerized calculation which will offer easy calculations in the cart page. If the user wishes to remove the product, he can simply hit the remove button in the cart page. After ordering the item the website provides a unique order id which is helpful in order to track order. The database has a backup at the admin side. The admin also provides status of ordered products which can be seen by the user in the tracker attribute.

CHAPTER 3

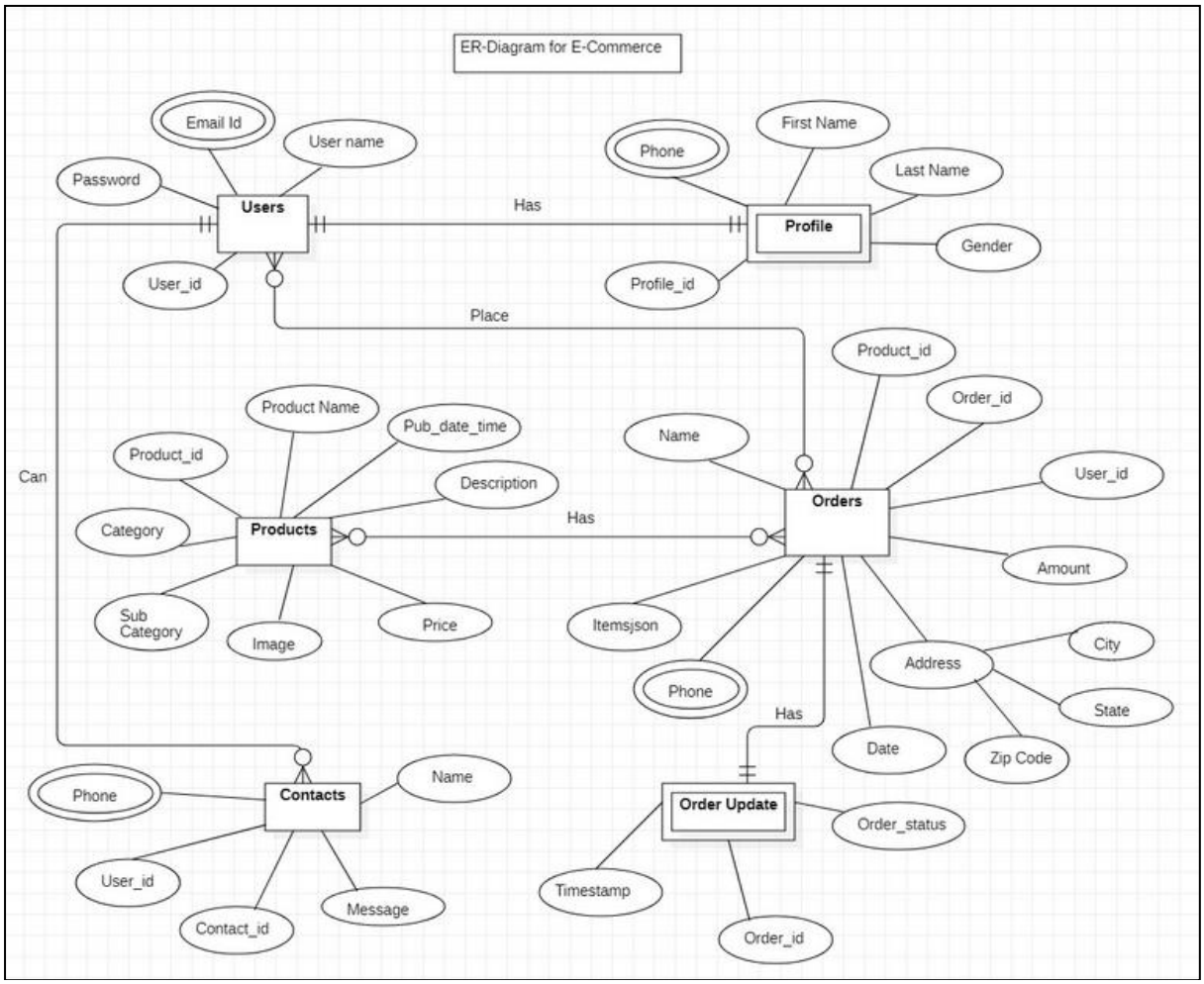
PROPOSED SYSTEM

3.1) Introduction

User comes to MyCart Website Welcome page will be seen by user, user can add products to cart by clicking on add to cart and increment and decrement the products using plus minus button and clear cart using clear cart button. User can checkout product and for purchasing the products user should login first. User have to register first and then can login to purchase the products.

After register and successful login user will be directed to Home Page where user can see Profile of user, Order History, Tracker and Logout. For registration validations regex classes of javaScript are used and python logic to check that already registered user is not able to register again. Products pages are there and search option is present. About Us and Contact Us page with which user can contact. Registered user can purchase the products on checkout , user has to provide user address details and purchase product can check status of products in tracker.

3.2) Architecture (Er diagram)



3.3) Process Design

Web Pages	Components
Welcome Page	• Navbar • Carousel for products images • Body includes Products images and product info • Footer
Home	According to the category, product will be shown
Login	Username, Password and forgot Password
Signup | register	Username, email, Password, Security Question & Answer, Phone
About	Including all info about company establishment
Contact	Name, Email, Content/Message, Phone number
Search	All the Products as per the mention in search

Product Description Page	Product name, Description, Pictures, Price, Add to Cart Option
Cart Page	All the Products Included in the Cart , Product Name, Product Price and total amount of all products
Check Out Page	Address, City, State , Country, Pin code, Cart Total and Cart Products
Success/ Fail Page	Payment Transaction status
Products Page	Particular Category Products
Profile Page	First Name ,Last Name, Gender, Phone Information about User
Order History Page	Products history ordered by the User-Product id, Date of Purchase, Products Name, Total Cost
Tracker Page	Order Status according to Product Id

Implementation of Code:

Logic For Products Carousel:

Views.py:

```
def home(request):
    allProds = []
    catprods = Product.objects.values('category', 'id')
    cats = {item['category'] for item in catprods}
    for cat in cats:
        prod = Product.objects.filter(category=cat)
        n = len(prod)
    # Logic For carousel Slides
        nSlides = n // 4 + ceil((n / 4) - (n // 4))
        allProds.append([prod, range(1, nSlides), nSlides])
    params = {'allProds': allProds}
 # Data is pass in Dictionary Form
    return render(request, 'shop/home.html', params)
```

Index.html:

```
<!-- All Products -->
<div class="container" >

  <!--Slideshow starts here -->
  {% for product, range, nSlides in allProds %}

  <h5 class="my-4 margin-top">Flash Sale On {{product.0.category}} - Recommended
Items</h5>

  <div class="row">
    <!-- div for carousel -->
    <div id="demo{{forloop.counter}}" class="col carousel slide my-3" data-bs-
ride="carousel">
      <!-- Indicators: These are the indicators i.e buttons at the bottom -->

      <ul class="carousel-indicators">
        <li data-bs-target="#demo{{forloop.counter}}" data-bs-slide-to="0"
class="active"></li>

        {% for i in range %}
        <li data-bs-target="#demo{{forloop.parentloop.counter}}" data-bs-slide-
to={{i}}></li>
        {% endfor %}
      </ul>

      <!-- Wrapper for slides -->
      <div class="container carousel-inner no-padding">

        <!-- carousel -->
```

```
      <div class="carousel-item active">
        {% for i in product %}
        <div class="col-xs-3 col-sm-3 col-md-3">
          <div class="card align-items-center border-card">
            <a href="/shop/products/id={{i.id}}"><img src="/media/{{i.image}}"
id="imgpr{{i.id}}" class="card-img-top img-fluid cardImg" alt="..."></a>
            <div class="card-body">
              <h5 class="card-title cardTitle"
id="namepr{{i.id}}">{{i.product_name|slice:'0:20'}}</h5>
              <p class="card-text margin-bottom productDesc">{{i.desc|slice:'0:20'}}...</p>
              <b><p class="card-text" id="prizepr{{i.id}}">Rs.{{i.price}}</p></b>
              <!-- button Add to card -->
              <span id="divpr{{i.id}}" class="divpr ">
                <button id="pr{{i.id}}" class="btn btn-primary cart addCartBtn">Add to
Cart</button>
              </span>
              <!-- button for Product View -->
              <a href="/shop/products/id={{i.id}}"><button id="pv{{i.id}}" class="btn btn-
primary ProdViewBtn">Product
                  View</button></a>
            </div>
          </div>
        </div>
        {% if forloop.counter|divisibleby:4 and forloop.counter > 0 and not forloop.last %}
      </div>
      <div class="carousel-item">
        {% endif %}
        {% endfor %}
      </div>

    </div> <!-- container carousel-inner no-padding -->
  </div> <!-- carousel slide my-3 -->



  <!-- button keep out of container so that notoverlapping the carousel -->
  <!-- Left and right controls -->
  <a class="carousel-control-prev" href="#demo{{forloop.counter}}" data-bs-
slide="prev">
    <span class="carousel-control-prev-icon"></span>
  </a>

  <a class="carousel-control-next" href="#demo{{forloop.counter}}" data-bs-
slide="next">
    <span class="carousel-control-next-icon"></span>
  </a>

 </div> <!-- rows of container -->
 {% endfor %}
</div> <!-- Main container -->
```

Description: The Data is pass from the database in form a inform of Dictionary, Then accessing those dictionary using For loop and Django Templating method.

Logic For Various Form Validation:

For Form Validations Regex is used from JavaScript:

For Email:

```
// Email Event Listener
  email.addEventListener('blur', () => {
    //  validate email here
    let regex = /^([_\-\.0-9a-zA-Z]+)@([_\-\.0-9a-zA-Z]+).([a-zA-Z]{2,7}$)/;
// Universal taken from Stackoverflow
    let str = email.value;
    console.log(str)
    if (regex.test(str)) {
      email.classList.remove('is-invalid')
      email.classList.add('is-valid');
      validEmail = true;
    }
    else {
      email.classList.remove('is-valid');
      email.classList.add('is-invalid')
      validEmail = false;
    }
  });
```

For UserName: regex = /^[a-zA-Z]([0-9a-zA-Z]){3,15}$/;
For Address: regex = /^[a-zA-Z0-9]+([a-zA-Z',-\\/.\s]+){2,100}$/;
For Phone: regex = /^[0-9]{10}$/;
For City, State: regex = /^[a-zA-Z\s-]{3,20}$/;
For Pincode: regex = /^[0-9]{6}$/

For Submit Button:

```
let submit = document.getElementById('placeOrder');
  submit.addEventListener('click', (e) => {
    if (validUserName && validPhone && validAddress && validZipCode && validCity
&& validState) {
      errorMsg.style.display = 'none';
    }
    else {
      errorMsg.style.display = 'block';
      e.preventDefault();
    }
  })
```

Logic For Add to Cart and Total Cart Products

```
*/
  Functions and there descriptions:
  add_products_cart(): this function will add the products in cart and update in local storage
  total_cart_product(cart) : this function will add the total products present in local storage
and show navigation bar
  updatecart(cart): this function will increment and decrement the cart and storage in local
storage as well update in navigation  */
-----------------------------------------------------------------------------------------------------------
-----
  // Find out the cart items from localStorage
  if (localStorage.getItem('cart') == null) {
    // initialize an cart object
    var cart = {};
  }
  else {
    // in localstorage the item is in string form so to parse in JSON format use JSON.parse
    cart = JSON.parse(localStorage.getItem('cart'));
    // calling the function to get total cart products:
    total_cart_product(cart)
    updateCart(cart)
  }
-----------------------------------------------------------------------------------------------------------
-----
  // If the add to cart button is clicked, add increment/decrement the item
  cart_products = document.getElementsByClassName('cart')

 // Using Foreach loop to add event Listener for all the buttons on home page
  Array.from(cart_products).forEach(function (cart_product) {
    cart_product.addEventListener("click", add_products_cart)
  })

// Adding products to cart
  function add_products_cart(event) {
    console.log("button click")
    var idStr = this.id.toString();
    //console.log(idStr); // idStr is the key and added is values

    // if cart[pr5] is defined then go in if
    if (cart[idStr] != undefined) {
      // cart[pr5] = (cart[pr5].value + 1) i.e. 1 + 1
      qty = cart[idStr][0] + 1;
      cart[idStr] = [qty, name];
    }
    else {
      qty = 1;
      name = document.getElementById('name' + idStr).innerHTML;
      image = document.getElementById('img' + idStr).src;
      prize = document.getElementById('prize' + idStr).innerHTML;
      cart[idStr] = [qty, name, image , prize]; // cart_key = cart_value
    }
```

```
    //console.log(cart);
    localStorage.setItem('cart', JSON.stringify(cart));
    // since i am already having cart
    total_cart_product(cart)
    updateCart(cart)
  }
--------------------------------------------------------------------------------
// total cart products in navigation bar
  function total_cart_product(cart) {
    var sum = 0
    for(let item in cart){
      sum = sum + cart[item][0];
    }
    document.getElementById('cart').innerHTML = sum;
  }
--------------------------------------------------------------------------------
// For incrementing and decrementing the cart
  function updateCart(cart){

    for(let item in cart){
      //console.log(item)
      document.getElementById('div' + item).innerHTML = "<button id='minus" + item + "' class='btn btn-primary minus'> - </button> <span id='val" + item + "' >" + cart[item][0] + "</span> <button id='plus" + item + "' class='btn btn-primary plus'> + </button>";
    }

  minus = document.getElementsByClassName("minus")

  // ************ For Minus Button *****************

  Array.from(minus).forEach(function (item_minus) {
    item_minus.addEventListener("click", ()=>{
      console.log("Minus Clicked")
      minus_btn_id = item_minus.id
      span_btn_id = item_minus.parentElement.children[1].id

      cart_item_id = minus_btn_id.slice(5,)
      cart[cart_item_id][0] = cart[cart_item_id][0]  - 1
      cart[cart_item_id][0] = Math.max(0, cart[cart_item_id][0]);

      if(cart[cart_item_id][0] == 0){
        console.log('div'+ cart_item_id)
        cart_zero_item_id = 'div'+ cart_item_id
        document.getElementById(cart_zero_item_id).innerHTML = `<button id=${cart_item_id} class="btn btn-primary cart">Add to Cart</button>`
        delete cart[cart_item_id]
        updateCart(cart)
        location.reload(true)
      }
      else{
```

```
        span_btn_id.innerHTML = cart[cart_item_id][0] // we will have cart[cart_item_id] is
value of pr1
      }
      //console.log(cart)
      updateCart(cart)
      total_cart_product(cart)
    })
  })


  // ************* For Plus Button ******************
  plus = document.getElementsByClassName("plus")
  //console.log(plus)
  Array.from(plus).forEach(function (item_plus) {
    item_plus.addEventListener("click", ()=>{
      console.log("Plus Clicked")
      minus_btn_id = item_plus.id
      span_btn_id = item_plus.parentElement.children[1].id
      plus_btn_id = item_plus.parentElement.children[2].id
      cart_item_id = plus_btn_id.slice(4,)
      cart[cart_item_id][0] = cart[cart_item_id][0] + 1
      //console.log(cart)
      span_btn_id.innerHTML = cart[cart_item_id][0]
      updateCart(cart)
      total_cart_product(cart)
    })
  })

  // Adding items in local storage
  //console.log("Update cart returns during reloading only" , cart)
  localStorage.setItem('cart', JSON.stringify(cart));
  }
```

Logic For Tracker Response:

```
def trackerResponse(request):
    if request.method == "POST":
        orderId = request.POST.get('orderId', '')
        email = request.session.get('email')
        print(orderId, email)
        try:
            order = Orders.objects.filter(order_id = orderId, email= email)
            print(order)
            if len(order)>0:
                update = OrderUpdate.objects.filter(order_id = orderId)
                print(update)
                updates = []
                for item in update:
                    updates.append({'text':item.update_desc, 'time': item.timestamp})
                    response = json.dumps(updates, default=str)
                    params = {'response': response}
```

```
            return render(request, 'shop/trackerResponse.html', params)
        else:
            return HttpResponse('Please enter Correct Order Id...')
    except Exception as e:
        return HttpResponse('Please enter Correct Order Id...')
    return render(request, 'shop/trackerResponse.html', response)
return render(request, 'shop/trackerResponse.html')
```

Logic For Search:

```
def searchMatch(query, item):
    ''' return true only if user Query match the item present in the Database '''
    if query in item.desc.lower() or query in item.product_name.lower() or query in
item.category.lower() or query in item.subcategory.lower():
        return True
    else:
        return False


def search(request):
    query = request.GET.get('search').lower()
    allProds = []
    catprods = Product.objects.values('category', 'id')
    cats = {item['category'] for item in catprods}
    for cat in cats:
        prodtemp = Product.objects.filter(category=cat)
        prod = [item for item in prodtemp if searchMatch(query, item)]
        if len(prod) != 0:
            n = len(prod)
            nSlides = n // 4 + ceil((n / 4) - (n // 4))
            allProds.append([prod, range(1, nSlides), nSlides])
    params = {'allProds': allProds}
    return render(request, 'shop/search.html', params)
```

Logic for Particular Category of Products:

```
def electronicsProd(request):
    allProds = []
    category = 'Electronics'
    request.session['category'] = category
    prod = Product.objects.filter(category=category)
    n = len(prod)
    allProds.append(prod)
    params = {'allProds': allProds}
    return render(request, 'shop/productsPage.html', params)
```

Logic For Logic:

```
def login(request):
    if request.method == "GET":
        login.returnUrl = request.GET.get('return_url')
        return render(request, 'shop/login.html')
```

```
    if request.method == "POST":
        email = request.POST.get('email', '')
        password = request.POST.get('password', '')
        customer = Register.get_customer_by_email(email)
        # print(email, password)
        if customer:
            # Customer Exists
            flag = check_password(password, customer.password)
            if flag:
                # session created and storing email, name , customer_id in the session
                request.session['customer_id'] = customer.register_id
                request.session['username'] = customer.username
                request.session['email'] = customer.email
                username = customer.username
                if login.returnUrl:
                    return HttpResponseRedirect(login.returnUrl)
                else:
                    messages.success(request, f'{username} you have successfully Logged
In.Happy Shopping!')
                    login.returnUrl = None
                    return redirect('/shop/home')
            else:
                # Customer Exists but made password incorrect
                messages.warning(request, f'Invalid Password!')
                return render(request, 'shop/login.html')
        else:
            messages.warning(request, f'Invalid Email!')
            return render(request, 'shop/login.html')
    return render(request, 'shop/login.html')
```

3.4) Details of Hardware and Software

- **Hardware required**:

Processor: Pentium iv or above
Ram: 2GB or above
Hard disk: 256 GB or above
Input devices: Keyboard, Mouse
Output devices: Monitor

- **Software required:**

OS: Ubuntu, MAC, Windows XP,7,8 ,8.1,10
Frontend: HTML, CSS, Bootstrap, JavaScript
Backend: Django (Python)
Browser: Google, Firefox, Microsoft Edge, etc

3.5) Experiment and Results for Validation and Verification

Results:

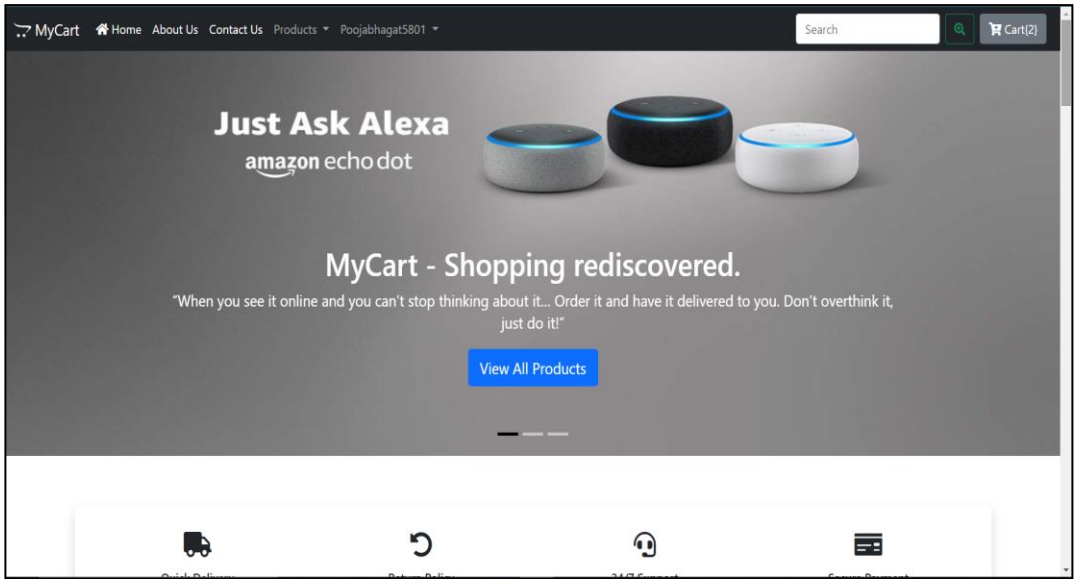


Figure 1:Home Page

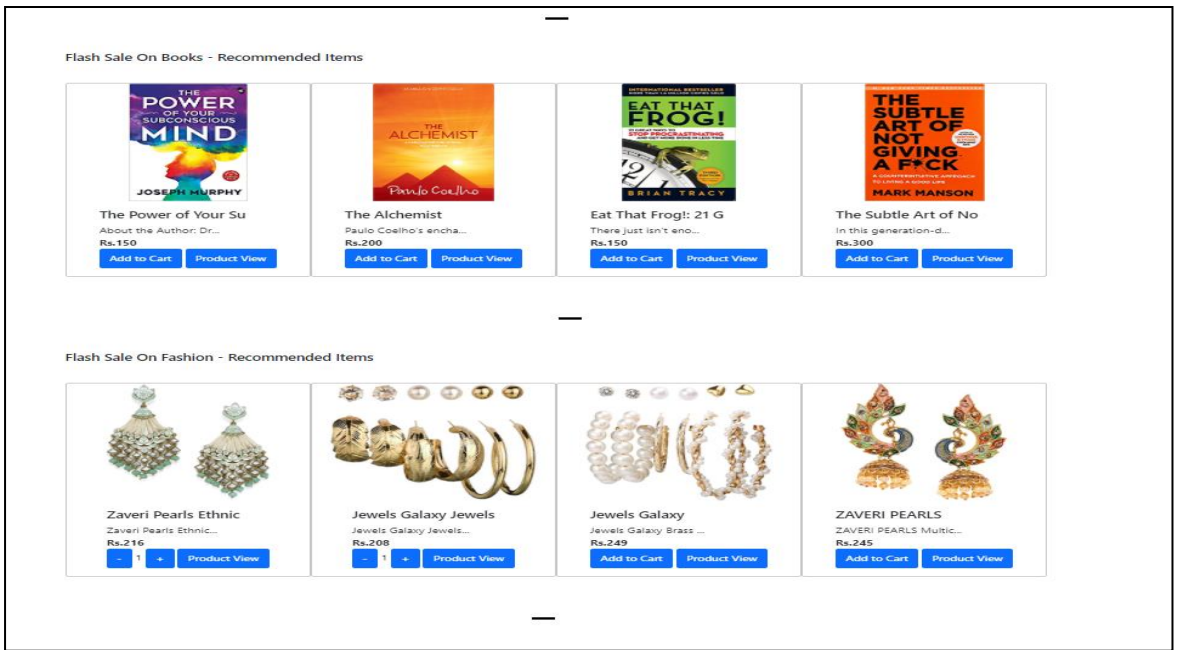


Figure 1.1:Home Page

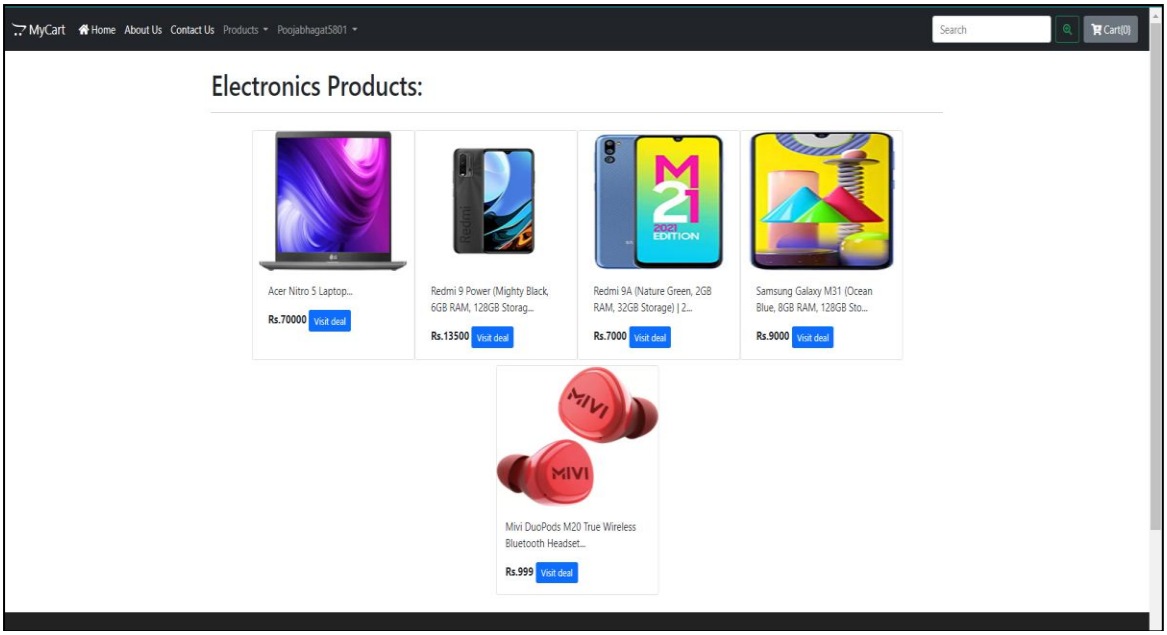


Figure 2.1: Electronics Products

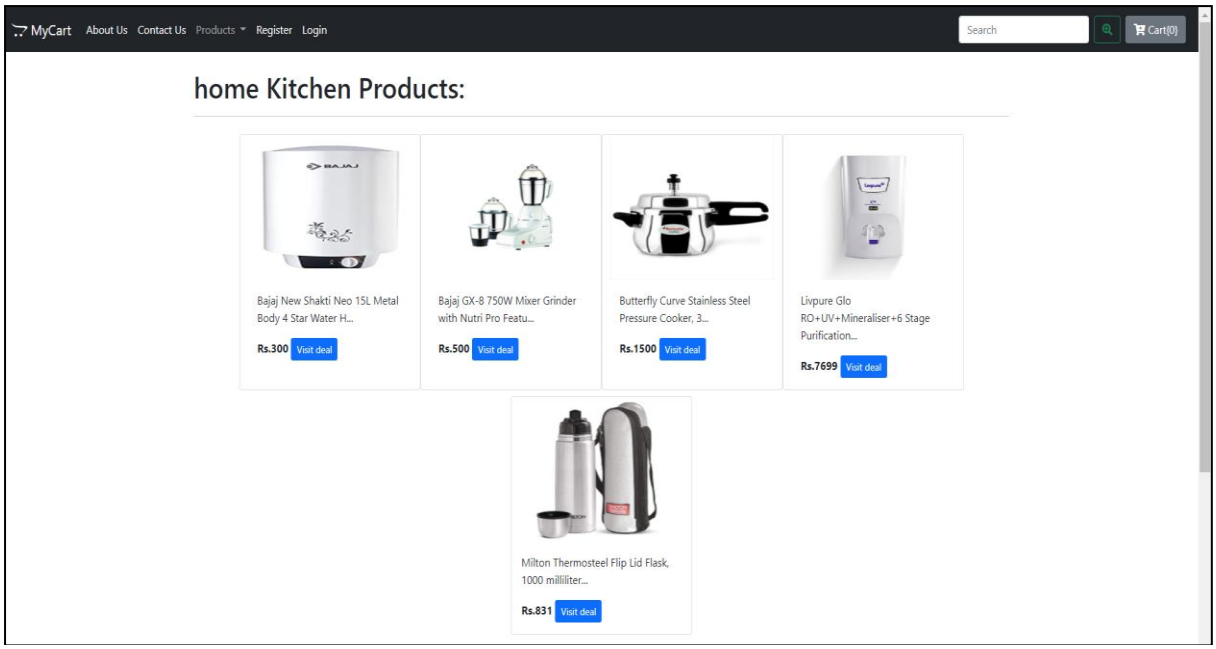


Figure 2.2: Home Kitchen Products

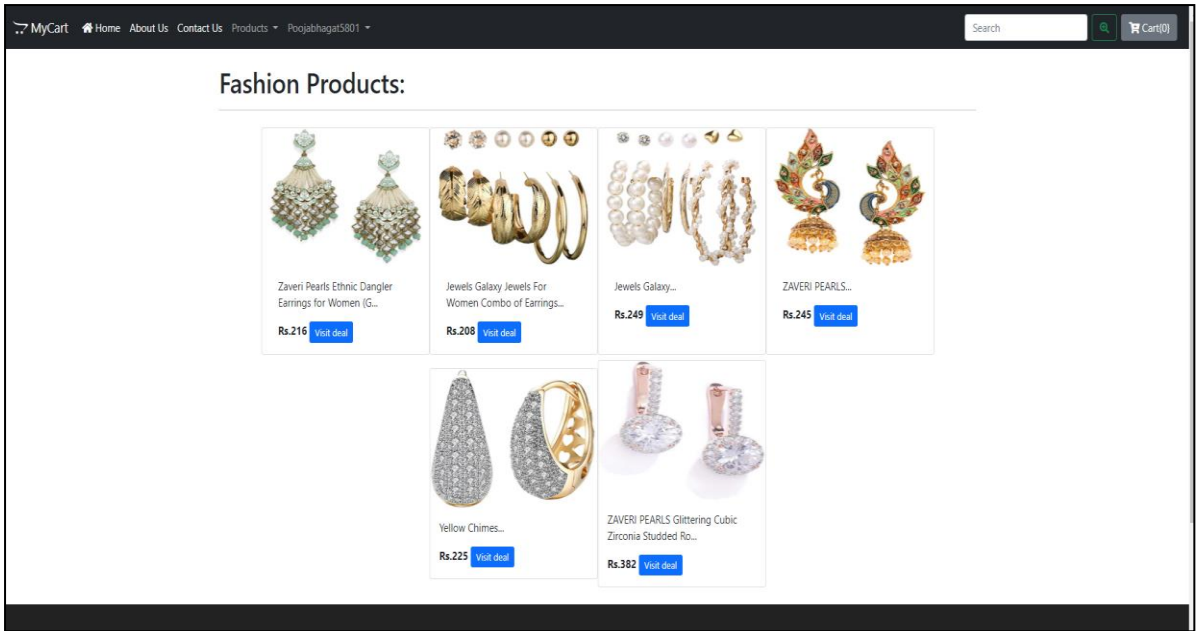


Figure 2.3:Fashion Products

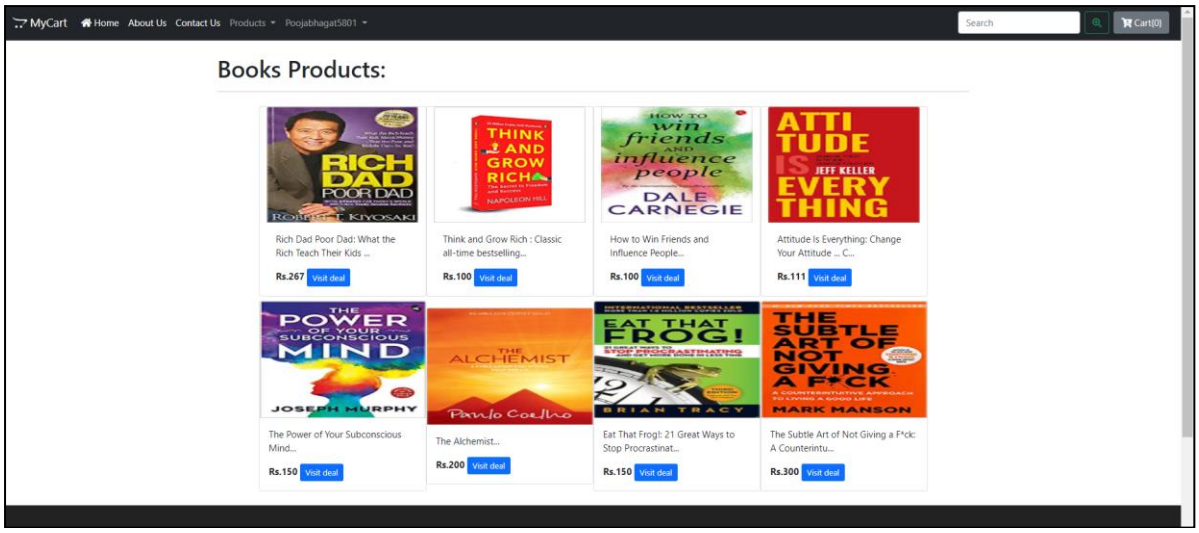


Figure 2.4: Books Products

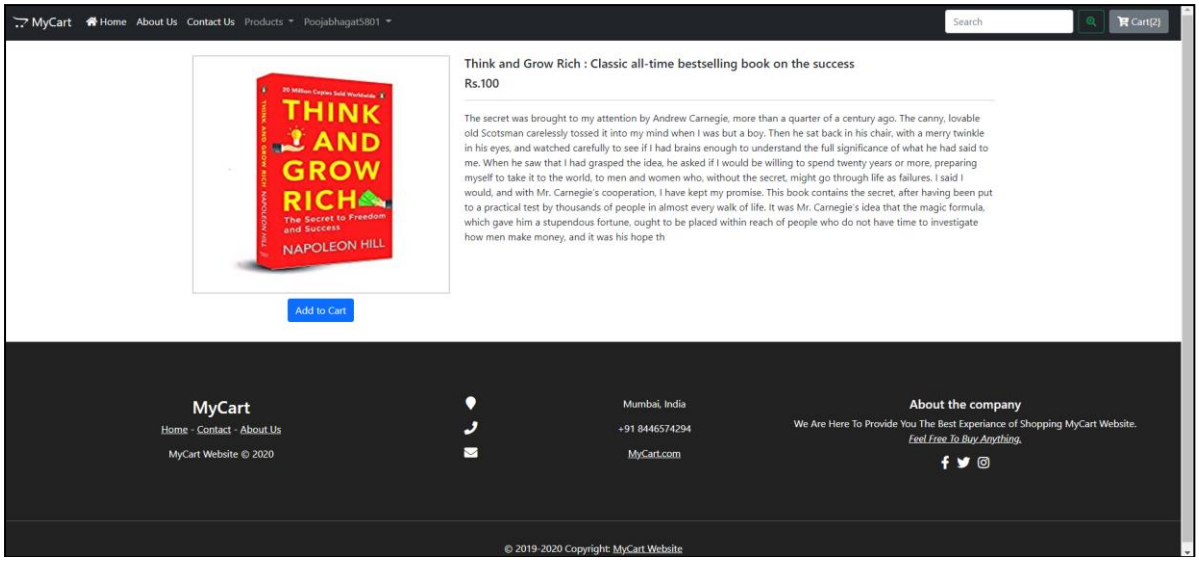


Figure 2: Product Description

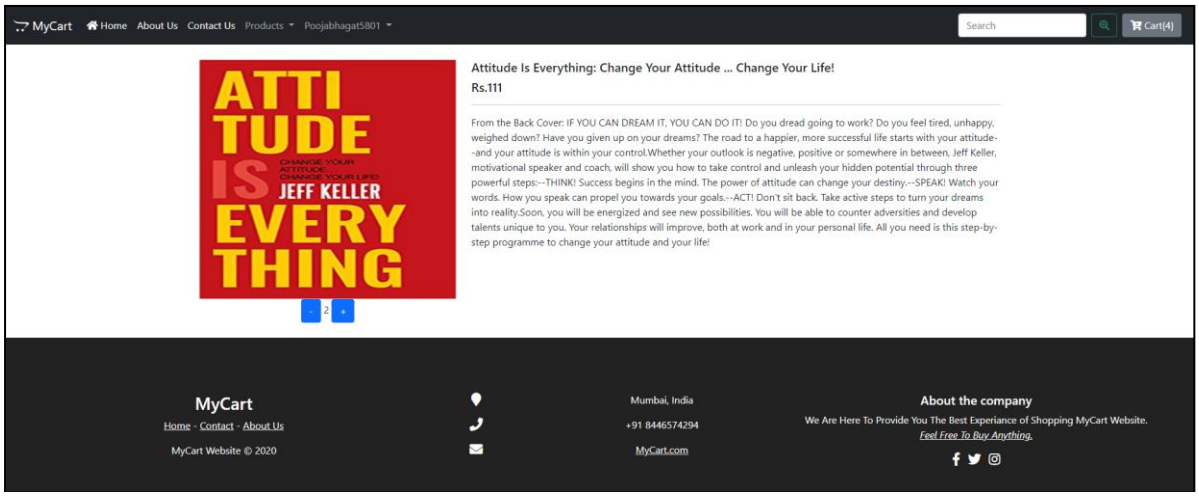


Figure 3: Product Added to cart

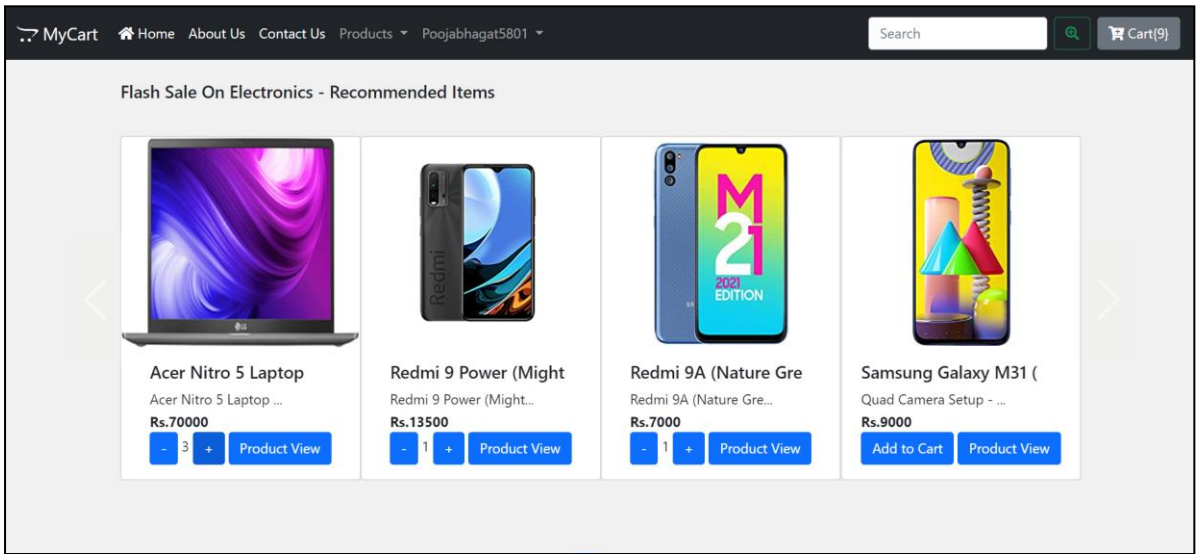


Figure 4.1:Product Added to cart from Products page

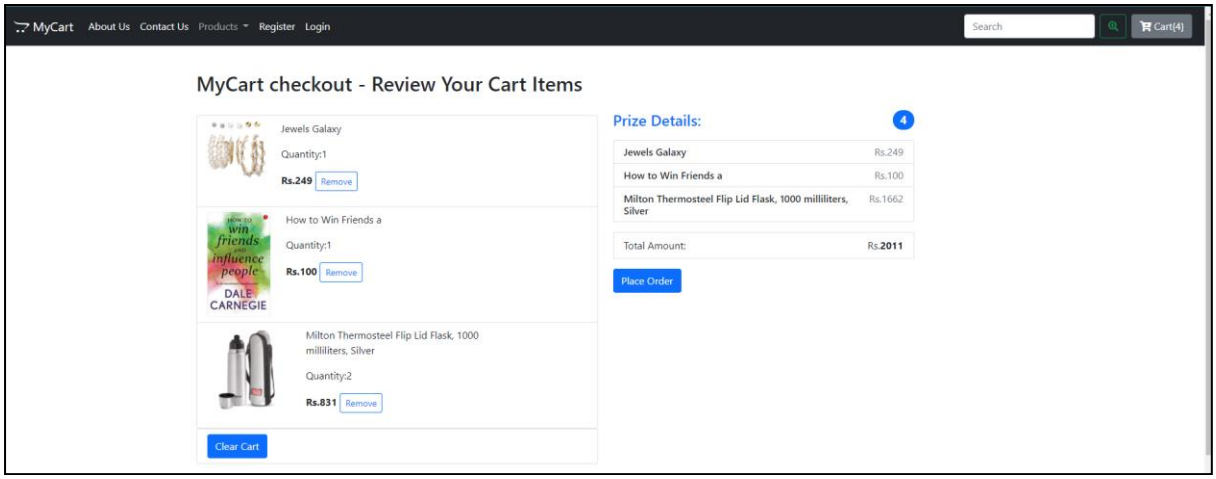


Figure 4: My Cart Checkout page

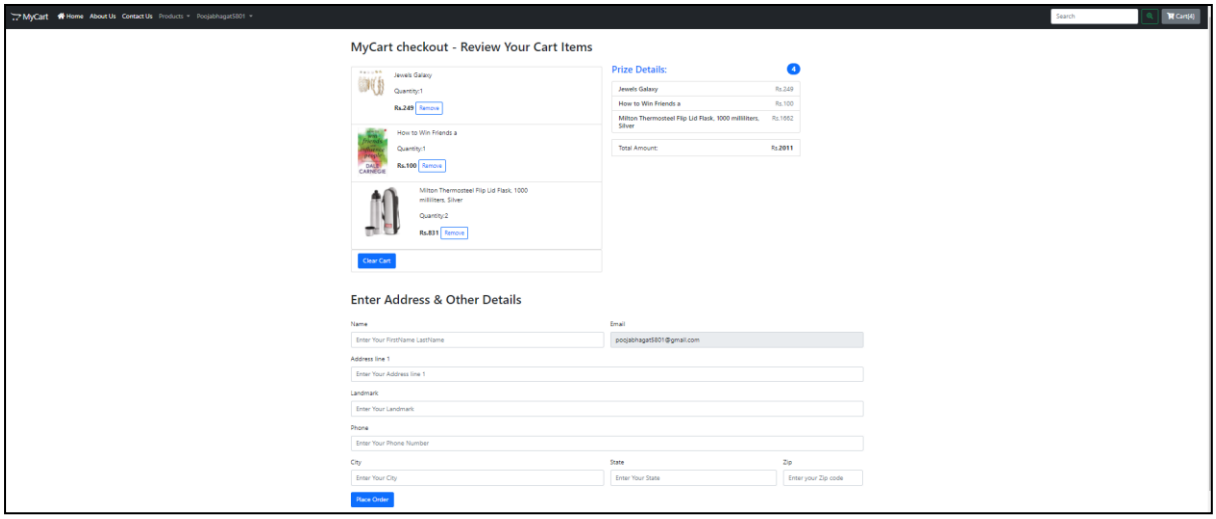


Figure 5: Place Order page

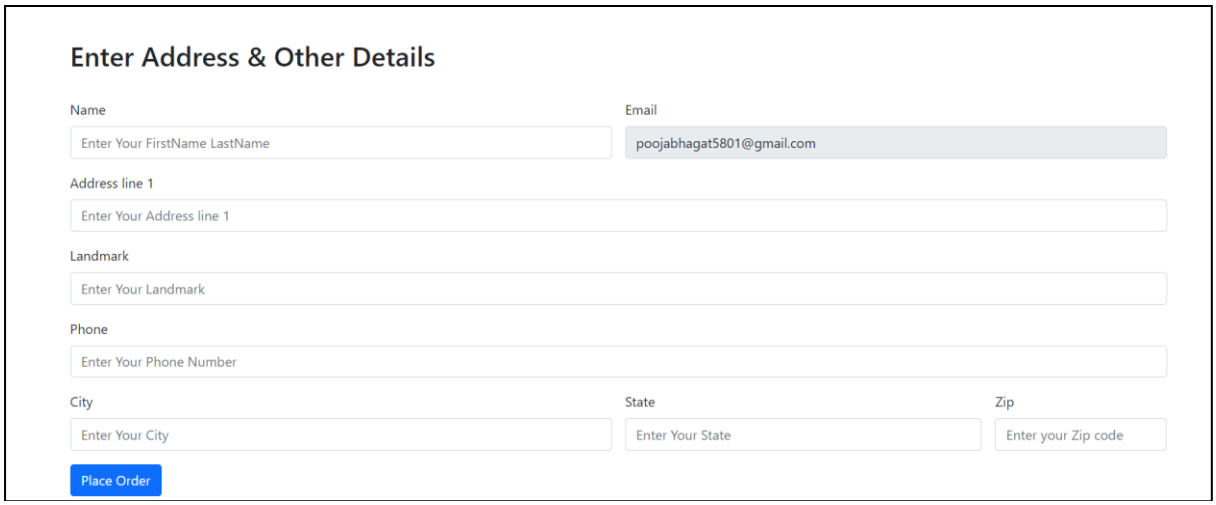


Figure 6.1: Fill Address and other Details

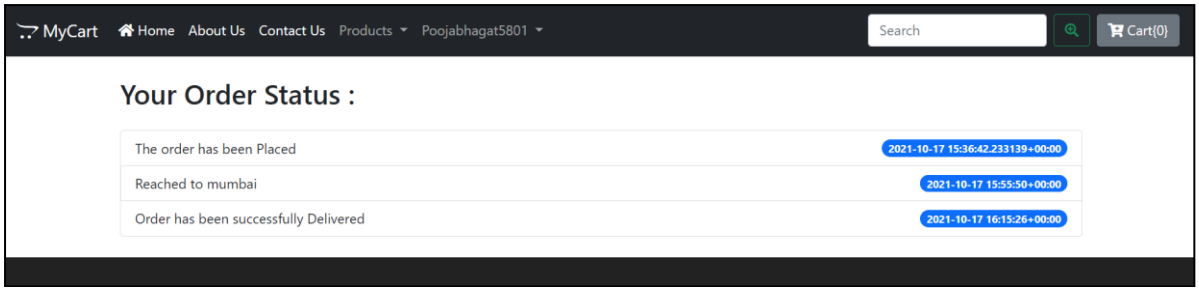


Figure 7: Order Status

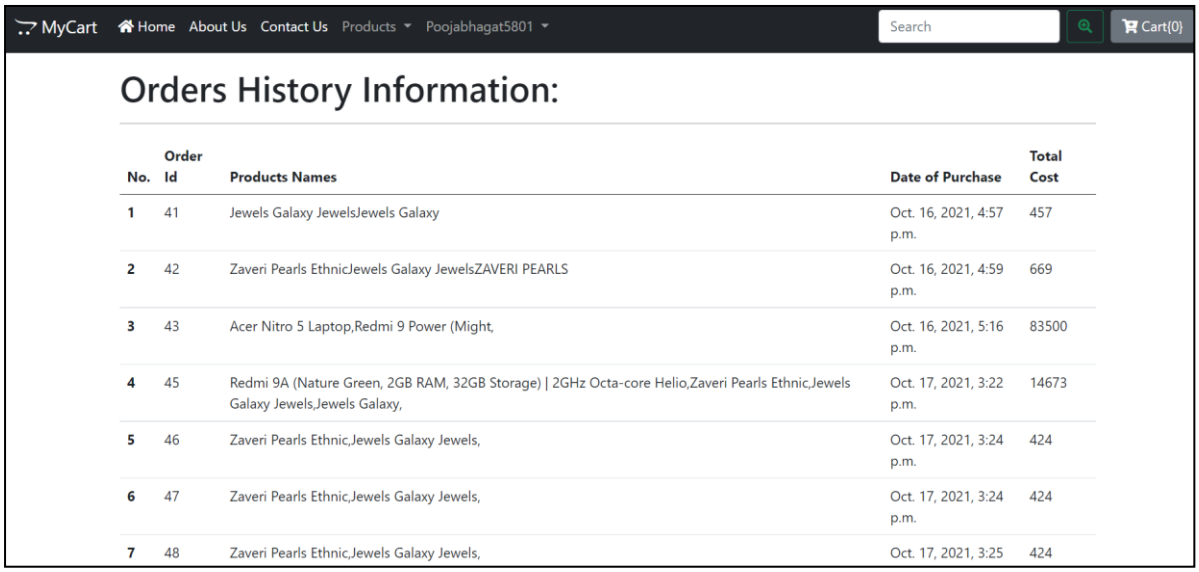


Figure 8: Order History Information

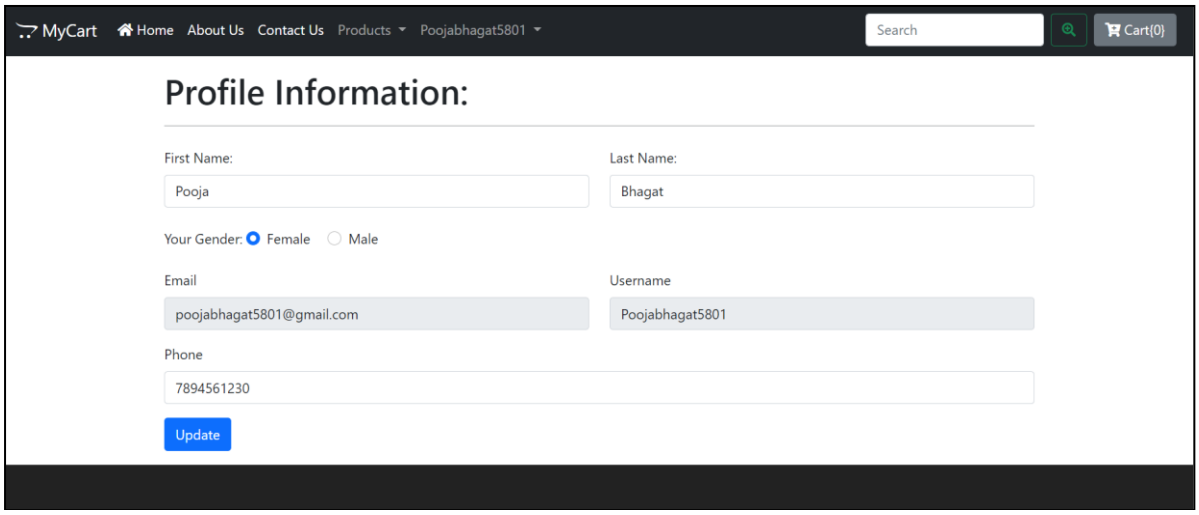


Figure 9: Profile Information

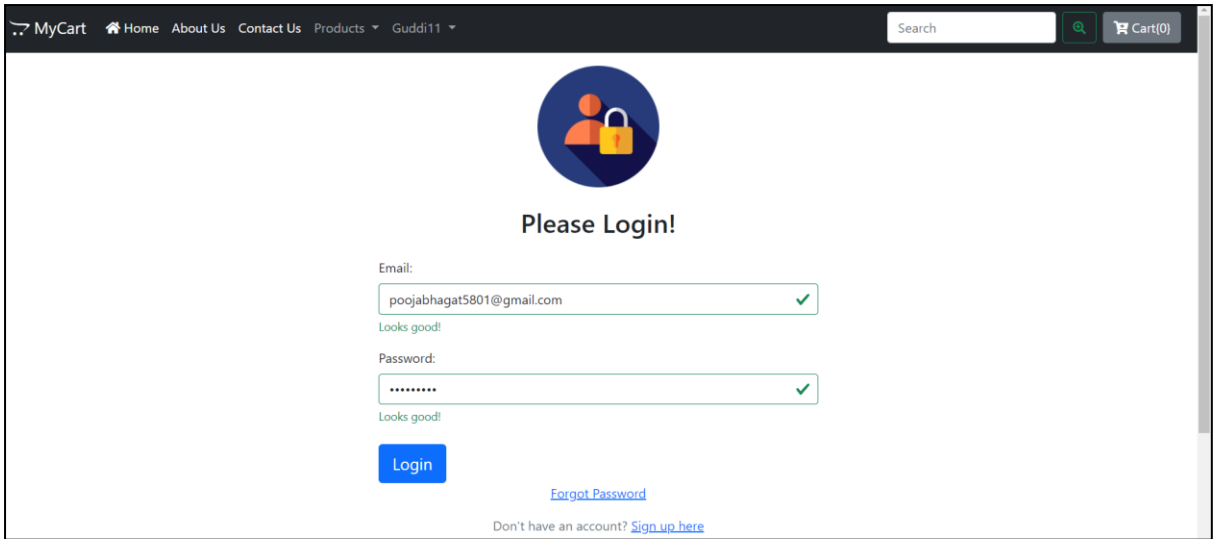


Figure 10: Login page

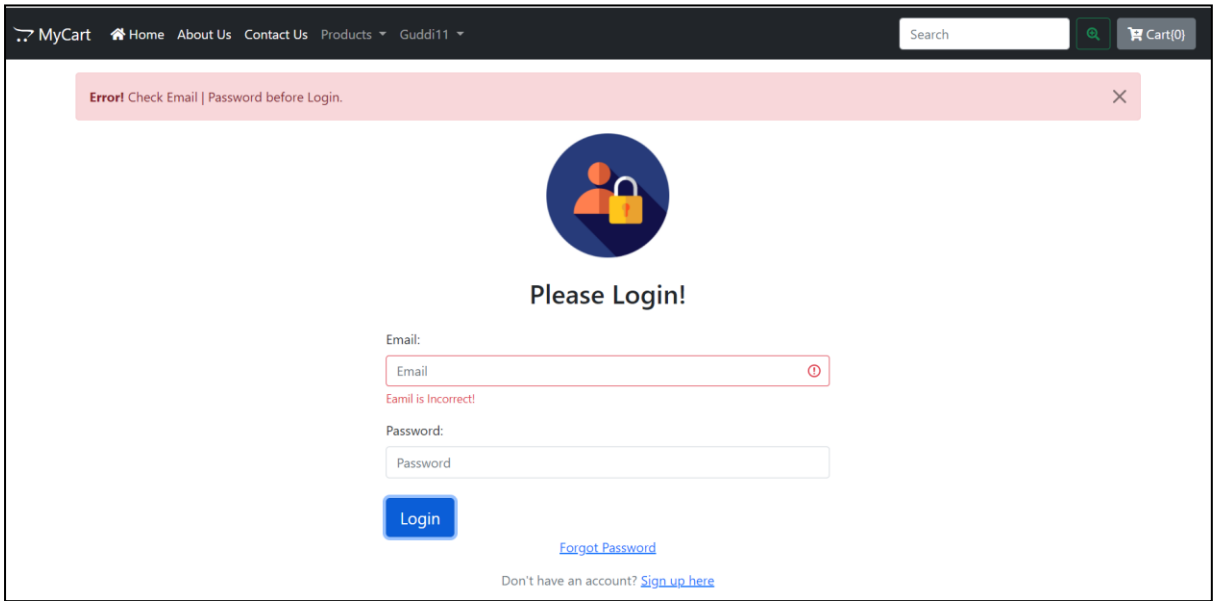


Figure 10.1: Invalid Username or Password

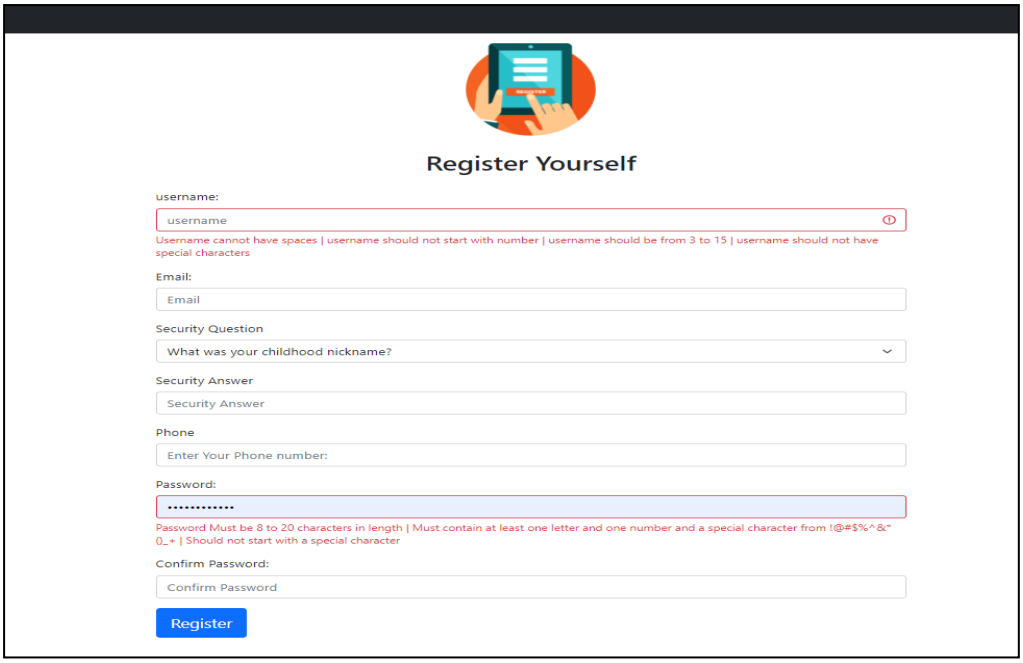


Figure 11: Registration page with validations

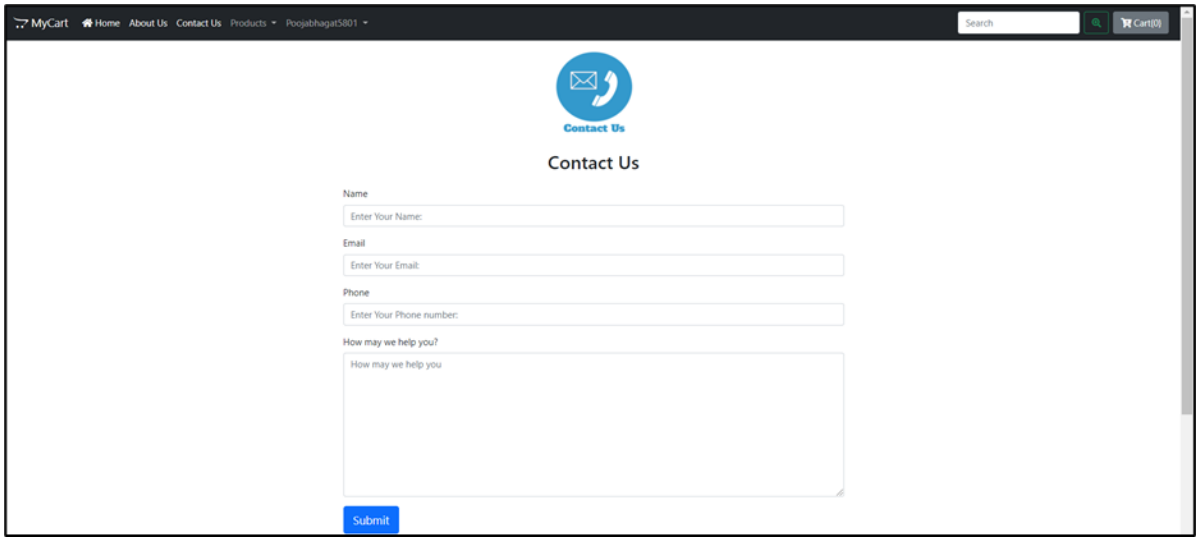


Figure 12: Contact us page

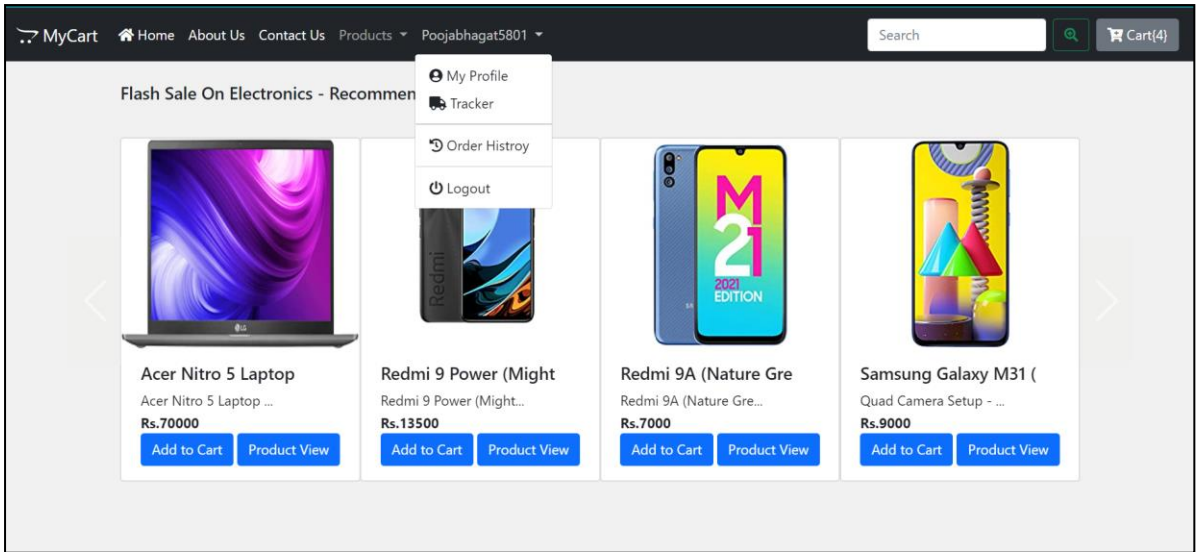


Figure 13:User Account

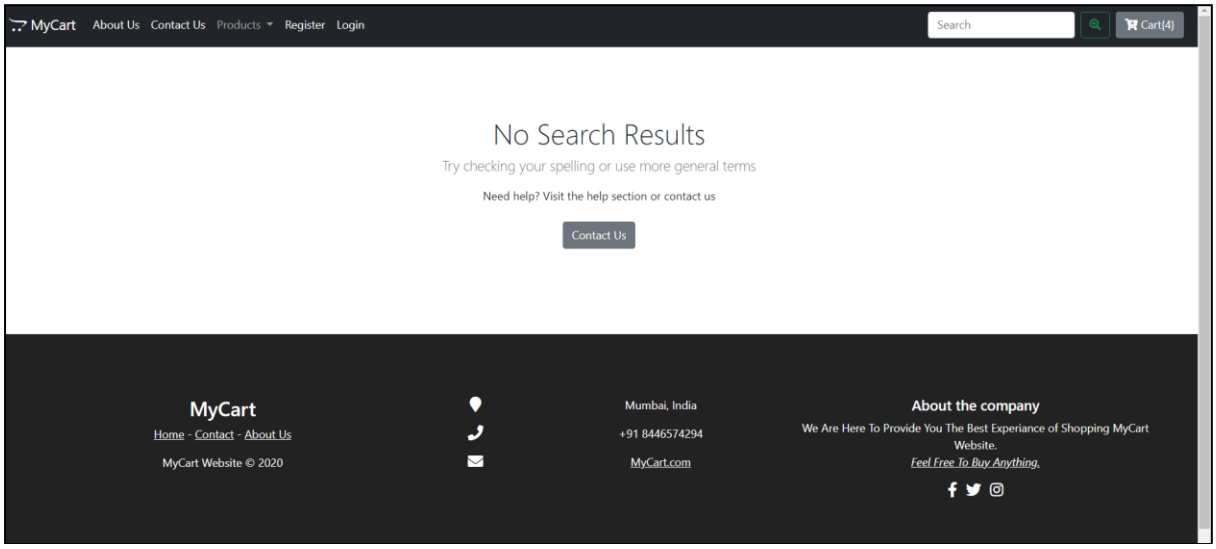


Figure 14:Seraching product

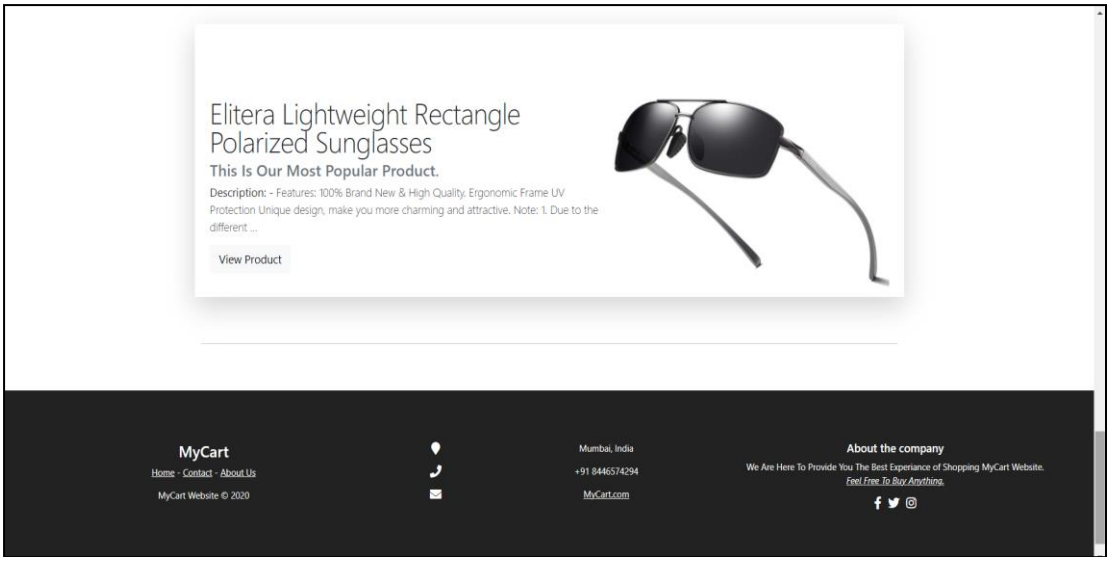


Figure 15:Footer

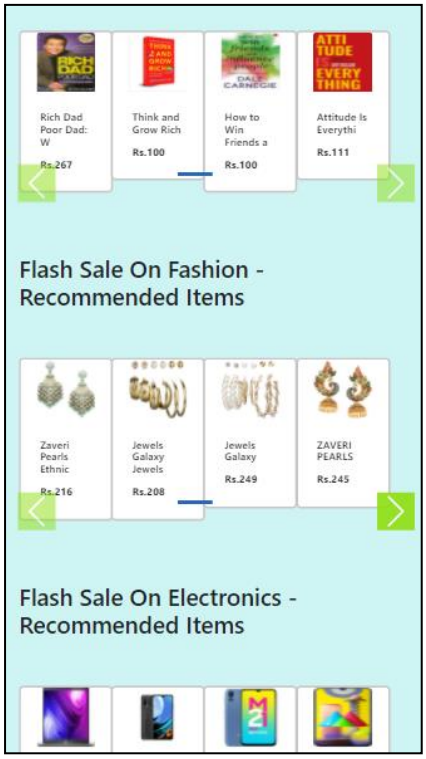


Figure 16: Welcome Page

Figure 17: Electronics Products page

Figure 18:Product View Page

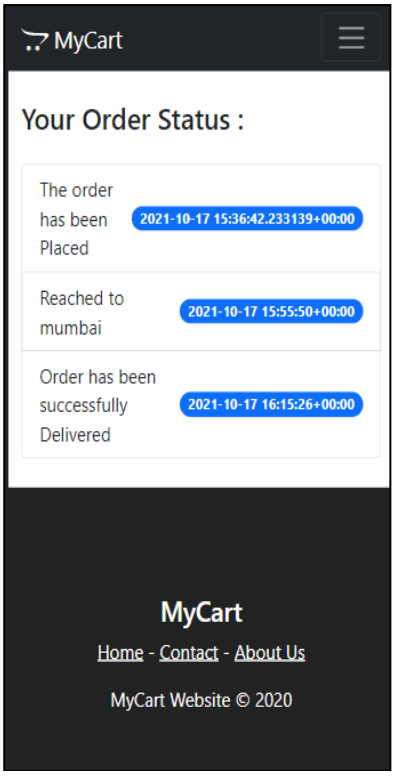


Figure 19: Order Tracking page

Experiments of verification and validation

Project	**Ecommerce Website**
Test Suite	**#1**
Title	**Verify "User Login"**
Description	**To test the different Scenarios that might arise while an user is trying to login**

Test Case	Summary	Pre-condition	Post-Condition	Execution Steps	Expected Output
1	Verify that user already registered is able **to login with correct email and password**	User email should be in format example340@gmail.com and Customer password should be in format Sid@5908	User is Logged in	Type in email as example340@gmail.com Type in password as Sid@5908 Click on the Login Button	Home Page for the user is Displayed
2	Verify that unregistered **user is unable to login**	User email and password is not registered	User is not logged in	Type incorrect email and type incorrect password	Warning Message is shown Check Email and Password before submitting
3	Verify that user already registered is unable to login with **in-correct password**	User email is registered but password is incorrect	User is not logged in	Type in email as example340@gmail.com Type incorrect password Click on the Login Button	Warning Message is shown Check Password before submitting
4	Verify that a registered user can **login using forgot password by correct email and answering Correct security question and answer**	User email should be in format example340@gmail.com and Select Security Question and input Security Answer	User is logged in	Type in email as example340@gmail.com Select Security Question as What was your childhood nickname? Input Security Answer: bittu Click on the submit Button	Home Page for the user is Displayed

Project	**Ecommerce Website**
Test Suite	**#2**
Title	**Verify "Register"**
Description	**To test the different Scenarios that might arise while an user is trying to Register**

Test Case	Summary	Pre-condition	Post-Condition	Execution Steps	Expected Output
1	Verify that unregistered **user is able to register with all correct details**	User email is not registered	User account will be created and user is now registered	Type in email as example340@gmail.com Type in username as Sid5678 Security question selection, and security answer, Password in form Sid@7890 and confirm password is same Click on the Register button	Home Page for the user is Displayed
2	Verify that user already registered is unable to register again	User email is registered	User will not be able to register or create account	Type in email as example340@gmail.com Type in username as Sid5678 Security question selection, and security answer, Password in form Sid@7890 and confirm password is same Click on the Register button	Warning Message is shown Email already registered do login

Project	**Ecommerce Website**
Test Suite	**#3**
Title	**Verify "Add to Cart Buttons"**
Description	**To test the different Scenarios that might arise while an user is trying to add products to cart**

Test Case	Summary	Pre-condition	Post-Condition	Execution Steps	Expected Output
1	User add product to cart	User can be registered or un-registered	Product is added to cart	User Click on Add to Cart Button	Add to cart button split in plus and minus button with product number in between buttons. Added Product in cart visible in navbar cart and Check out Page
2	User add product to cart more than 1 product	Minus and Plus buttons available after adding one product to cart	More products are added to cart	User click on Plus button	How many products added is shown between minus and plus buttons. Added Product in cart visible in navbar cart and Check out Page
3	User add product to cart more than 30 product	Minus and Plus buttons available after adding one product to cart	Plus button will be disabled	User click on Plus button	Product will not be added to cart more than 30
4	User remove the product from cart.	Minus and Plus buttons available after adding one product to cart	Add to Cart button will be shown	User click on minus	Product removed from cart and Plus minus button again changed to Add to Cart button.

3.4) Conclusion and Future work.

Conclusion

E-commerce is continuously progressing and is becoming more and more important to businesses as technology continues to advance and is something that should be taken advantage of and implemented. The successful companies of the present/future are those that take e-commerce seriously, dedicating sufficient resources to its development. From the inception of the Internet and e-commerce, the possibilities have become endless for both businesses and consumers. Creating more opportunities for profit and advancements for businesses, while creating more options for consumers.

The internet has opened so many opportunities for doing business online, and e-commerce is one of the most popular ones. We as customers and internet users are responsible to keep our e-commerce healthy and safe so that e-business can be more reliable in the future. E-Commerce is not just about conducting business transactions via the Internet. Its impact will be far-reaching, and more prominent then we know currently. This is because the revolution in information technology is happening simultaneously with other developments, especially the globalization of the business. The new age global e-commerce is creating entirely new economy and that will tremendously change our lives, will reshape the competition in various industries, and alter the economy globally. As companies are gaining high profits, more and more other companies are developing their websites to increase their profits. Since more businesses are being held online resulting in high economy development and emergence of a more innovative and advanced technology.

Future work

Analytics of Sales

Sales analytics is the process used to identify, model, understand and predict sales trends and sales results while helping in the understanding of these trends and finding improvement points. It is used to determine the success of a previous sales drive and forecast as well as determine how future ones will fare.

Search System can be optimized

References

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- https://www.linkedin.com/pulse/conclusion-e-commerce-farah-ameen
- https://www.codewithharry.com/videos/python-django-tutorials-hindi-0
- https://www.youtube.com/playlist?list=PLdBwVRHjcI__NWxctXUSLz1Gg2Mb-B-O-
- https://getbootstrap.com/docs/5.0/getting-started/introduction/
- https://docs.djangoproject.com/en/3.2/
- https://developer.mozilla.org/en-US/docs/Web/CSS/Reference
- https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference